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REMARKS

Pending Claims

Claims 1, 9, 17, 25, and 40 have been amended to more clearly describe what Applicants regard as the invention. In particular, the phrase "and derivatives" had been deleted from claims 1, 9, 17, and 40 and the phrase "or derivatives" has been deleted from claim 25. No new matter has been added. Claims 1, 5-15, 17-18, 21-25, 34-35, and 40 are pending.

Rejection of Claims Under 35 U.S.C. § 112

The Examiner has rejected claims 1, 5-15, 17-18, 21-25, 34-35, and 40 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In paragraph 2 of the Office Action, the Examiner states that the scope of claim 1 is confusing since this claim recites that the first chemical group, second chemical group, and third chemical group each comprise at least one organic group selected from the group consisting of "acyl azides, isocyanates, ..., and salts and derivative thereof" and it is unclear what is meant by "derivatives" or what types of organic groups are encompassed by this phrase. The Examiner further states that similar questions arise in claim 40, which also recites "derivatives" with respect to the first chemical group, second chemical group, and third chemical group.

Also in paragraph 2 of the Office Action, the Examiner states that the scope of claim 9 is also confusing since this claim recites that the polymer is selected from the group consisting of "a polyamine, a polyalkylene oxide, a polyol, a polyacrylate, and salts and derivatives thereof" and it is unclear what is meant by "derivatives" or what types of polymers are

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encompassed by this phrase. The Examiner further states that similar questions arise in each of claims 17 and 25, which also recite "derivatives" with respect to the polymer.

While Applicants believe that the term "derivatives" is clear and would be readily understood by one skilled in the art, both relating to the recited chemical groups and the polymers, in order to advance prosecution of this application, the phrase "and derivatives" has been deleted from claims 1, 9, 17, and 40. Also, the phrase "or derivatives" has been deleted from claim 25.

Applicants therefore believe that claims 1, 5-15, 17-18, 21-25, 34-35, and 40 are not indefinite and respectfully request that the rejection of these claims be withdrawn.

Rejection of Claims Under 35 U.S.C. § 102

Claims 1 and 8-13

The Examiner has rejected the above-identified claims under 35 U.S.C. § 102(e) as being anticipated by Moffatt et al. '932 (U.S. Patent No. 6,221,932) taken in view of evidence in *Organic Chemistry*.

In paragraph 4 of the Office Action, the Examiner states that Moffatt et al. '932 discloses a method of making a modified pigment comprising reacting a pigment having attached aromatic ester group with polymer such as polyethylene glycol, polyamine, or polyethyleneimine and that this reaction occurs by nucleophilic substitution. While the Examiner notes that Moffatt et al. '932 discloses that the aromatic ester group undergoes nucleophilic substitution and not addition-elimination reaction as presently claimed, the Examiner states that this does not mean that the aromatic ester group does not or cannot undergo addition-elimination reaction and supports this position with *Organic Chemistry* which discloses that elimination-addition is a specific type of nucleophilic substitution or specific mechanism used in nucleophilic substitution. The Examiner therefore concludes that Moffatt et al. '932 anticipates the present claims.

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Applicants respectfully disagree. Claim 1 recites a method of making a modified pigment comprising reacting a pigment having attached a first chemical group with a second chemical group to form a pigment having attached a third chemical group. The first chemical group, the second chemical group, and the third chemical group each comprises at least one organic group selected from a recited list, which includes aromatic compounds which undergo addition-elimination reactions.

By comparison, Moffatt et al. '932 describes the reaction of modified pigments which comprise an aromatic ester group or activated ester group. One skilled in the art would recognize that these aromatic groups are not the types that undergo addition-elimination reactions, as recited in present claim 1. As shown in the text of *Organic Chemistry* cited by the Examiner, an addition-elimination reaction of a substituted aromatic group involves replacement of the substituent by a reacting species. Thus, reaction occurs on the aromatic ring. Instead, the aromatic groups of Moffatt et al. '932 undergo nucleophilic substitution or acylation reactions (see column 4, lines 35-39), in which reaction occurs at the ester carbonyl. There is no replacement of the ester group, as would occur in an addition-elimination reaction, and no indication that these groups could or would undergo such a reaction. Therefore, the groups identified by Moffatt et al. '932, which are shown in the diagram spanning columns 4 and 5, are not the aromatic groups recited present claim 1. Thus, while the polymer group disclosed in Moffatt et al. '932 may be a polyethyleneimine and therefore may comprise a group included in the list of claim 1 of the present invention, this reference does not disclose the reaction of a first chemical group with a second chemical group wherein each comprises a group selected from those specified in claim 1.

Therefore, Applicants believe that claim 1 is not anticipated by Moffatt et al. '932. Furthermore, 8-13, which depend directly or indirectly from claim 1, recite further embodiments of the present invention and, for at least the reasons discussed above, are also not anticipated by this reference.

Applicants therefore believe that claims 1 and 8-13 are not anticipated by Moffatt et al. '932 and respectfully request that this rejection be withdrawn.

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Claims 1, 5, 8-9, 12, 14-15, 17-18, and 40

The Examiner has rejected the above-identified claims under 35 U.S.C. § 102(b) as being anticipated by PCT Publication No. WO 99/31175.

In paragraph 5 of the Office Action, the Examiner states that WO 99/31175 discloses a method of making a modified pigment comprising reacting carbon black pigment which has attached organic group which has attached ionic or ionizable group with at least one polymer which attached to the ionic group. The Examiner also states that this reference discloses that the polymer includes polyamides or polyacrylates and that the organic group includes amide group, aromatic group, aliphatic group derived from ketone or aldehyde, and alkyl sulfates. The Examiner therefore concludes that WO 99/31175 anticipates the present claims.

Applicants respectfully disagree. Claims 1 and 40 each recite a method of making a modified pigment comprising reacting a pigment having attached a first chemical group with a second chemical group to form a pigment having attached a third chemical group. The first chemical group comprises at least one electrophile, and the second chemical group comprises at least one nucleophile, or vice versa. The first chemical group, the second chemical group, and the third chemical group each comprises at least one organic group selected from a recited list.

By comparison, WO 99/31175 describes three types of modified carbon products and methods for preparing them. Applicants believe that none of these modified carbon products are prepared using the method recited in present claims 1 or 40.

One type of modified carbon product disclosed in WO 99/31175 is one having attached at least one organic group, monomeric group, or polymeric group (see page 5, lines 13-15). These may be prepared by a diazonium attachment method (see, for example, page 6, line 26 to page 7, line 11). While WO 99/31175 details many types of organic groups, polymeric groups, and monomeric groups, there is no disclosure, teaching, or suggestion in WO 99/31175 of reacting any of these attached groups with a second chemical group. Therefore,

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the first type of modified carbon product does not anticipate the method of present claims 1 or 40.

A second type of modified carbon product disclosed in WO 99/31175 is a carbon product having attached a group having the formula $-\text{Ar}-\text{CO}_2-\text{R}$, wherein R is an organic group, monomeric group, or a polymeric group (see page 15, lines 18-24). These may be prepared by a method which involves the esterification reaction of modified pigments comprising an aromatic acid group (see page 15, line 25 to page 16, line 6 and the diagram therein as well as Example 3). However, this is not a group recited in present claims 1 or 40. Therefore, the second type of modified carbon product does not anticipate the method of the above-identified claims.

Finally, the third type of modified carbon product disclosed in WO 99/31175 is a carbon product having attached a) at least one organic group directly attached to the carbon product, b) at least one ionic group, ionizable group, or mixture thereof attached to the organic group, and c) at least one counter-ionic or counter-ionizable group with at least one organic group, monomeric group, or polymeric group. The counter-ionic or counter-ionizable group is attached to the ionic or ionizable group (see page 16, lines 8-13). These can be prepared by a method which involves the exchange of a counter-ionizable group (see page 16, line 27 to page 17, line 23 and the diagram therein). However, these are not the groups recited in present claims 1 or 40. Specifically, the groups disclosed in WO 99/31175 would not be recognized by one skilled in the art as being electrophilic and nucleophilic groups, as disclosed in the present application. Rather these are ionic or ionizable groups which undergo counterion exchange. No electrophilic/nucleophilic reaction is disclosed in relation to this type of modified product. Therefore, the third type of modified carbon product does not anticipate the method of present claims 1 or 40.

Therefore, Applicants believe that claims 1 and 40 are not anticipated by WO 99/31175. Furthermore, claims 5, 8-9, 12, 14-15, and 17-18, which are directly or indirectly dependent from claim 1, recite further embodiments of the present invention and, for at least the reasons discussed above, are also not anticipated by this reference.

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Applicants therefore believe that claims 1, 5, 8-9, 12, 14-15, 17-18, and 40 are not anticipated by WO 99/31175 and respectfully request that this rejection be withdrawn.

Claims 1, 8-10, 12-13, and 40

The Examiner has rejected the above-identified claims under 35 U.S.C. § 102(e) as being anticipated by Kwan (U.S. Patent No. 6,235,829).

In paragraph 6 of the Office Action, the Examiner states that Kwan discloses a method of making a modified pigment comprising pigment which has functional group such an amino or epoxy with polymer which has reactive group such as isocyanate, amine, or amide. The Examiner further states that the pigment includes carbon black as well as organic pigment such a yellow pigment, red pigment, etc. and that the polymer includes polyacrylate and those obtained from aldehyde containing monomers or amine or amide containing monomers. The Examiner therefore concludes that Kwan anticipates the present claims.

Applicants respectfully disagree. Claims 1 and 40 each recite a method of making a modified pigment comprising reacting a pigment having attached a first chemical group with a second chemical group to form a pigment having attached a third chemical group. The pigment having attached a first chemical group is prepared by reacting a diazonium salt having the first chemical group with at least one type of pigment to form the pigment having attached a first chemical group. The first chemical group, the second chemical group, and the third chemical group each comprises at least one organic group selected from a recited list.

By comparison, Kwan teaches a method of making a non-polar suspension of chargeable pigment particles by contacting pigment particles with a polymer resin having a reactive group. The pigment particles are described as being both inherently ionic or chargeable and having surface anchoring groups, which react with the reactive groups of the polymer (column 2, line 51 to column 3, line 26). However, unlike present claims 1 and 40, Kwan does not disclose, teach or suggest that either of these groups is attached by a diazonium salt. Thus, Kwan does not disclose the method of the present invention since this reference does not teach or suggest the modified pigments of the present invention.

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Therefore, Applicants believe that claims 1 and 40 are not anticipated by Kwan. Furthermore, claims 8-10 and 12-13, which are directly or indirectly dependent from claim 1, recite further embodiments of the present invention and, for at least the reasons discussed above, are also not anticipated by this reference.

Applicants therefore believe that claims 1, 8-10, 12-13, and 40 are not anticipated by Kwan and respectfully request that this rejection be withdrawn.

Claims 21-22, 24, 34-35, and 40

The Examiner has rejected the above-identified claims under 35 U.S.C. § 102(e) as being anticipated by Moffatt et al. '257 (U.S. Patent No. 6,323,257).

In paragraph 7 of the Office Action, the Examiner states that Moffatt et al. '257 discloses modified pigment and ink jet ink comprising modified pigment wherein the modified pigment has attached at least one directly attached organic group which is the reaction product of (2-sulfatoethyl)-sulfone group and at least one nucleophilic polymer such as those obtained from ester of acrylic acid, i.e., polyacrylate, and containing polyalkylene glycol. The Examiner therefore concludes that Moffatt et al. '257 anticipates the present claims.

Applicants respectfully disagree. Regarding claims 21, 22, and 24, claim 21 recites a modified pigment having attached at least one organic group, wherein said organic group comprises: the reaction product of at least one (2-sulfatoethyl)-sulphone group and at least one nucleophilic polymer.

By comparison, Moffatt et al. '257 does not disclose this type of modified pigment. Instead, Moffatt et al. '257 clearly teaches a modified pigment which is the reaction product of a polymerization reaction with the attached reactive groups. For example, column 6, lines 7-9 teaches that the presence of the attached reactive groups allows the polymerization reaction to occur in water. A variety of suitable polymerization reactions are taught at column 6, lines 13-15. Most importantly, Moffatt et al. '257 clearly states the reaction is a radical chain polymerization that occurs at the reactive group (see column 6, line 15-18). This is further supported by the extensive list of radical-polymerizable monomers which can be used (column 6,

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line 27 to column 16, line 16). These would not be recognized by one skilled in the art as nucleophilic polymers. In addition, the specific polymer cited by the Examiner in the Office Action (i.e., a polymer obtained from an ester of acrylic acid and containing polyalkylene glycol) is also not a nucleophilic polymer. Rather, column 6, line 30-31 of Moffatt et al. '257 describes this as an alkylene glycol "derived from acrylic and methacrylic acid" which is a radical-polymerizable monomer and not a nucleophilic polymer. Therefore, there is no disclosure, teaching, or suggestion of the use of a nucleophilic polymer, as is recited in present claim 21.

Therefore, Applicants believe that claim 21 is not anticipated by Moffatt et al. '257. Furthermore, claims 22 and 24, which are dependent from claim 21, recite further embodiments of the present invention and, for at least the reasons discussed above, are also anticipated by this reference.

Regarding claims 34-35, claim 34 recites an ink composition comprising a liquid vehicle and a modified pigment, wherein the modified pigment comprises a pigment having attached at least one organic group, wherein said organic group comprises: the reaction product of a pigment having attached at least one (2-sulfatoethyl)-sulphone and at least one nucleophilic polymer. For the reasons discussed in more detail above regarding claims 21, 22, and 24, Moffatt et al. '257 does not disclose this type of ink composition since the modified pigment of Moffatt et al. '257 is not the reaction product of a nucleophilic polymer. Rather, Moffatt et al. '257 describes a radical chain polymerization that occurs at the reactive group.

Therefore, Applicants believe that claim 34 is not anticipated by Moffatt et al. '257. Furthermore, claim 35, which depends directly from claim 34, recites a further embodiment of the present invention and, for at least the reasons discussed above, is also not anticipated by this reference.

Finally, regarding claim 40, this claim recites a method of making a modified pigment comprising reacting a pigment having attached a first chemical group with a second chemical group to form a pigment having attached a third chemical group. The first chemical group comprises at least one electrophile, and the second chemical group comprises at least one

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nucleophile, or vice versa. The first chemical group, the second chemical group, and the third chemical group each comprises at least one organic group selected from a recited list.

For the reasons discussed in more detail above, the method of present claim 40 is not the method of Moffatt et al. '257 since no nucleophilic reaction is disclosed, taught or suggested in this reference. Instead, Moffatt et al. '257 teaches that the reaction is a radical chain polymerization that occurs at the reactive group, which does not involve a nucleophilic group as recited in claim 40. Therefore, Applicants believe that claim 40 is not anticipated by Moffatt et al. '257.

Applicants therefore believe that claims 21-22, 24, 34-35, and 40 are not anticipated by Moffatt et al. '257 and respectfully request that this rejection be withdrawn.

Rejection of Claims under 35 U.S.C. § 103

Claim 23

The Examiner has rejected claim 23 under 35 U.S.C. § 103(a) as being unpatentable over Moffatt et al. '257 (U.S. Patent No. 6,323,257).

In paragraph 10 of the Office Action, the Examiner incorporates by reference the disclosure regarding Moffatt et al. '257 from paragraph 7. In addition, the Examiner states that the difference between this reference and the present claimed invention is the requirement in the claim of a specific type of (2-sulfatoethyl)sulfone group. In particular, the Examiner states that Moffatt et al. '257 discloses the use of phenyl (2-methyl ethyl sulfonato) sulfone while the present claim requires the use of phenyl (2-sulfatoethyl) sulfone, and these differ in that the compound of Moffatt et al. '257 contains a methyl substituent not present for the instantly claimed compound. However, the Examiner further states that, given the similarity between the claimed compound and that disclosed by Moffatt et al. '257, and given that the compound of Moffatt et al. '257 is used as a first chemical group on a pigment which is then reacted with a second chemical group, it would have been natural for one of ordinary skill in the art to infer that the presently claimed compound is just an obvious variant of that in Moffatt

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et al. '257 and to expect that the compound of the reference would have similar properties as the compound claimed. The Examiner therefore concludes that it would have been obvious to one of ordinary skill in the art that the phenyl (2-sulfatoethyl) sulfone disclosed in the present claim is but an obvious variant of the phenyl (2-methyl ethyl sulfanato) sulfone disclosed in Moffatt et al. '257, and thereby one of ordinary skill in the art would have arrived at the present invention.

Applicants respectfully disagree. Claim 23 depends directly from independent claim 21 and recites a modified pigment comprising a pigment having attached at least one organic group, wherein said organic group comprises the reaction product of at least one (2-sulfatoethyl)-sulphone group and at least one nucleophilic polymer, and wherein the (2-sulfatoethyl)-sulphone group is phenyl-(2-sulfatoethyl)-sulphone. For the reason discussed in more detail above regarding Moffatt et al. '257, the compound disclosed in this reference is not a first chemical group that is reacted with a second chemical group as disclosed in the present invention. Instead, Moffatt et al. '257 clearly teaches a polymerization reaction of the attached reactive groups and specifically states that the reaction is a radical chain polymerization that occurs at the reactive group (see column 6, line 15-18). Thus, while the first chemical group of Moffatt et al. '257 may be structurally similar to the phenyl (2-sulfatoethyl)-sulphone group of claim 23, the second chemical group of Moffatt et al. '257 is not a nucleophilic polymer as in claim 23. In addition it would not be obvious to replace the reactive monomers with a nucleophilic polymer since the reaction types disclosed are completely different.

Therefore, Applicants believe that claim 23 is patentable over Moffatt et al. '257 and respectfully request that this rejection be withdrawn.

Claim 25

The Examiner has rejected claim 25 under 35 U.S.C. § 103(a) as being unpatentable over Moffatt et al. '257 (U.S. Patent No. 6,323,257) in view of Moffatt et al. '932 (U.S. Patent No. 6,221,932).

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In paragraph 11 of the Office Action, the Examiner incorporates by reference the disclosure regarding Moffatt et al. '257 from paragraph 7. In addition, the Examiner states that the difference between this reference and the present claimed invention is the requirement in the claim of a specific type of polymer. In particular, the Examiner states that Moffatt et al. '932, which is drawn to ink composition comprising modified pigment, discloses attaching polymer such as polyethyleneimine to pigment in order to produce an ink with increased smearfastness, enhanced print quality, and improved bleed control. The Examiner further states that Moffatt et al. '932 further discloses the equivalence and interchangeability of polyalkylene glycols, as disclosed by Moffatt et al. '257, with polyethyleneimine. The Examiner therefore concludes that, in light of the motivation for using specific type of polymer disclosed by Moffatt et al. '932 as described above, it would have been obvious to one of ordinary skill in the art to use such polymer in the pigment of Moffatt et al. '257 in order to produce an ink with increased smearfastness, enhanced print quality, and improved bleed control, and thereby arrive at the claimed invention.

Applicants respectfully disagree. Claim 25 depends directly from independent claim 21 and recites a modified pigment comprising a pigment having attached at least one organic group, wherein said organic group comprises the reaction product of at least one (2-sulfatoethyl)-sulphone group and at least one nucleophilic polymer, and wherein the nucleophilic polymer is polyethyleneimine or salts thereof. For the reasons discussed in more detail above regarding Moffatt et al. '257, this reference does not relate to the use of nucleophilic polymers but rather to the radical polymerization of attached reactive groups. Also, Moffatt et al. '932 teaches a nucleophilic substitution or acylation reaction of an attached aromatic ester group or activated ester group. These are completely different types of reactions, and one skilled in the art would not be motivated to combine the teachings of Moffatt et al. '257 with those of Moffatt et al. '932. Even if one were to combine these references, this would not result in the method of claim 25. Instead, one would attempt to use the polymer types disclosed in Moffatt et al. '932 also in a radical polymerization reaction as taught in Moffatt et al. '257. To do otherwise would go against the teaching of this reference.

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Therefore, Applicants believe that claim 25 is patentable over Moffatt et al. '257 in view of Moffatt et al. '932, and respectfully request that this rejection be withdrawn.

Claims 1, 5-9, and 12

The Examiner has rejected claims 1, 5-9, and 12 as being unpatentable over Moffatt et al. '257 (U.S. Patent No. 6,323,257) in view of WO 99/31175.

In paragraph 12 of the Office Action, the Examiner states that Moffatt et al. '257 discloses a method of producing a modified pigment comprising reacting first chemical group such as (2-sulfatoethyl)-sulfone group with second chemical group, i.e. nucleophilic polymer such as polyalkylene glycol, in order to form third chemical group. In addition, the Examiner states that the difference between Moffatt et al. '257 and the present claimed invention is the requirement in the claims a) that the first chemical group is attached to the pigment using diazonium salt and b) specific type of (2-sulfatoethyl) sulfone group.

With respect to difference a), the Examiner states that Moffatt et al. '257 is silent with respect to how the first chemical group is attached to the pigment. However, the Examiner further states that WO 99/31175 discloses attaching chemical groups to carbon black using diazonium salt and that this reaction can occur in a variety of reaction conditions, in any type of reaction medium, and is compatible with a variety of functional groups. The Examiner therefore concludes that it would have been obvious to one of ordinary skill in the art to use diazonium salt to attach the first chemical group to the pigment of Moffatt et al. '257, and thereby arrive at the claimed invention.

With respect to difference b), the Examiner states that Moffatt et al. '257 discloses the use of phenyl (2-methyl ethyl sulfonato) sulfone while the present claims require the use of phenyl (2-sulfatoethyl) sulfone, and these differ in that the compound of Moffatt et al '257 contains a methyl substituent not present in the instantly claimed compound. The Examiner further states that, given the similarity between the claimed compound and that disclosed by Moffatt et al. '257, and given that the compound of Moffatt et al. '257 is used as a first chemical group on a pigment which is then reacted with a second chemical group, which is the

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identical function of the presently claimed compound, it would have been natural for one of ordinary skill in the art to infer that the presently claimed compound is just an obvious variant of that in Moffatt et al. '257 and to expect that the phenyl (2-methyl ethyl sulfonato) sulfone of Moffatt et al. '257 would have similar properties as the phenyl (2-sulfatoethyl) sulfone presently claimed. The Examiner therefore concludes that it would have been obvious to one of ordinary skill in the art that the phenyl (2-sulfatoethyl) sulfone disclosed in the present claim is but an obvious variant of the phenyl (2-methyl ethyl sulfonato) sulfone disclosed in Moffatt et al. '257, and thereby one of ordinary skill in the art would have arrived at the present invention.

Applicants respectfully disagree. Claim 1 recites a method of making a modified pigment comprising reacting a pigment having attached a first chemical group with a second chemical group to form a pigment having attached a third chemical group. The first chemical group comprises at least one electrophile, and the second chemical group comprises at least one nucleophile, or vice versa. The first chemical group, the second chemical group, and the third chemical group each comprises at least one organic group selected from a recited list.

For the reasons discussed in more detail above, Moffatt et al. '257 does not disclose, teach or suggest the method of claim 1 since it does not teach an electrophilic/nucleophilic reaction. Instead, Moffatt et al. '257 teaches a radical polymerization reaction that occurs at the reactive group. Thus, the method recited in claim 1 is patentable over this reference.

WO 99/31175 cannot cure the deficiencies of Moffatt et al. '257. In particular, Applicants believe that one skilled in the art would not combine these references since both Moffatt et al. '257 and WO 99/31175 each describe very different methods for preparing a modified pigment. For example, Moffatt et al. '257 relates to a radical polymerization method while, in the embodiments of WO 99/31175 involving a reaction of an attached group, WO 99/31175 teaches a) a method involving the esterification reaction of modified pigments comprising an aromatic acid group, and b) a method involving the exchange of a counter-ionizable group having at least one organic group, monomeric group, or polymeric group. The third method described in WO 99/31175 does not involve a further reaction of an attached group. Since the reaction

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methods are so different, Applicants do not believe that one skilled in the art would be motivated to combine these references.

Even if one of ordinary skill in the art were to combine these references, the resulting combination would not be the method of present claim 1. In particular, Applicants believe that one might use the diazonium salt, as taught in WO 99/31175, to attach the groups shown in Moffatt et al. '257. However, since the groups of Moffatt et al. '257 are not those recited in present claim 1, the resulting combination would therefore not be the present invention. Furthermore, as described in more detail above, while the first chemical group of Moffatt et al. '257 may be structurally similar to the phenyl (2-sulfatoethyl)-sulphone group of the present application, the second chemical group of Moffatt et al. '257 does not comprise at least one electrophile or nucleophile, as in the present claims. In addition it would not be obvious to replace the reactive monomers of Moffatt et al. '257 with a second chemical group comprising an electrophile or a nucleophile since the reaction types are completely different. Thus, even in combination, the result would not be the method of present claim 1.

Therefore, Applicants believe that claim 1 is patentable over Moffatt et al. '257 in view of WO 99/31175. Furthermore, claims 5-9 and 12, which are directly or indirectly dependent from claim 1, recite further embodiments of the present invention and, for at least the reasons discussed above, are also patentable over this combination of references.

Applicants therefore believe that claims 1, 5-9, and 12 are patentable over Moffatt et al. '257 in view of WO 99/31175, and respectfully request that this rejection be withdrawn.

Claims 10-11

The Examiner has rejected claims 10-11 as being unpatentable over Moffatt et al. '257 in view of WO 99/31157 as applied to claims 1, 5-9, and 12 above, and further in view of Moffatt et al. '932 (U.S. Patent No. 6,221,932).

In paragraph 13 of the Office Action, the Examiner states that the difference between Moffatt et al. '257 and the present claimed invention is the requirement in the claims of specific type of polymer. However, the Examiner states that Moffatt et al. '932, which is

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drawn to ink composition comprising modified pigment, discloses attaching polymer such as polyethyleneimine to pigment in order to produce an ink with increased smearfastness, enhanced print quality, and improved bleed control, and further discloses the equivalence and interchangeability of polyalkylene glycols, as disclosed in Moffatt et al. '257, with polyethyleneimine. The Examiner therefore concludes that, in light of the motivation for using specific type of polymer disclosed by Moffatt et al. '932 as described above, it would have been obvious to one having ordinary skill in the art to use such polymer in the pigment of Moffatt et al. '257 in order to produce an ink with increased smearfastness, enhanced print quality, and improved bleed control, and thereby arrive at the claimed invention.

Applicants respectfully disagree. Claims 10 and 11 depend indirectly from claim 1 and recite a method of making a modified pigment comprising reacting a pigment having attached a first chemical group with a second chemical group to form a pigment having attached a third chemical group. The first chemical group, the second chemical group, and the third chemical group each comprises at least one organic group selected from a recited list, and the second chemical group is either a polyamine (claim 10) or a polyethyleneimine (claim 11).

For the reasons discussed in more detail above, Moffatt et al. '257 does not teach or suggest the method of claims 10 or 11. In particular, this reference does not relate to the use of nucleophilic polymers but rather to the radical polymerization of attached reactive groups.

Furthermore, Moffatt et al. '932 cannot cure the deficiencies of Moffatt et al. '257. In particular, Applicants believe that one skilled in the art would not combine these references since both Moffatt et al. '257 and Moffatt et al. '932 each describe very different methods for preparing a modified pigment. For example, Moffatt et al. '257 relates to a radical polymerization method while Moffatt et al. '932 describes a nucleophilic substitution or acylation reaction of an attached aromatic ester group or activated ester group. These are completely different types of reactions, and one skilled in the art would not be motivated to combine the teachings of Moffatt et al. '257 with those of Moffatt et al. '932.

Even if one were to combine these references, particularly using the disclosure of WO 99/31175 to attach the first chemical group, the resulting combination would not be the method

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of claims 10-11. Instead, one might attempt to use the polymer types disclosed in Moffatt et al. '932 also in a radical polymerization reaction as taught in Moffatt et al. '257. However, this resulting combination is not the method of present claims 10 or 11.

Therefore, Applicants believe that claims 10-11 are patentable over Moffatt et al. '257 in view of WO 99/31175 as applied to claims 1, 5-9, and 12 above, and further in view of Moffatt et al. '932, and respectfully request that the rejection be withdrawn.

Conclusion

In view of the foregoing remarks, Applicants believe that this application is in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would further expedite the prosecution of the subject application, the Examiner is invited to call the undersigned.

Respectfully submitted,

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